

Friendship Support and Academic Motivation in First-Generation University Students: Academic Anxiety as a Moderator and Sense of Belonging as a Mediator

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Submitted:
2024-11-30

Published:
2025-05-05

Keywords:
Academic anxiety, Academic motivation, First-generation students, Friendship support, Sense of belonging

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This article is under:



How to cite:
Mtshweni, B. V. (2025). Friendship Support and Academic Motivation in First-Generation University Students: Academic Anxiety as a Moderator and Sense of Belonging as a Mediator. *Bulletin of Counseling and Psychotherapy*, 7(2). <https://doi.org/10.51214/002025071208000>

Published by:
Kuras Institute

E-ISSN:
2656-1050

ABSTRACT: In this study, the influence of friendship support on academic motivation with academic anxiety as a moderator and sense of belonging as a mediator was investigated. A cross-sectional quantitative research design was used, with a convenient sample of 240 undergraduate first-generation students (FGS) from a South African university. Data were collected using an online questionnaire comprising four instruments: The Multidimensional Scale of Perceived Social Support (MSPSS), Psychological Sense of School Membership (PSSM), Anxiety Scale for Undergraduate Students (ASUS) and Academic Motivation Scale (AMS). The simple linear regression analysis results showed that friendship support significantly predicted academic motivation. In addition, the moderation analysis results revealed that academic anxiety did not significantly moderate the relationship between friendship support and sense of belonging. Moreover, the mediation analysis results demonstrated that sense of belonging did not significantly mediate the relationship between friendship support and academic motivation. The findings of the study highlight that FGS should strive to cultivate supportive friendships and enhance feelings of belonging towards their institution to mitigate the adverse effects of academic anxiety and bolster their academic motivation for study success.

INTRODUCTION

For many students, attending university symbolises a significant milestone in their life because university education is linked to personal aspirations and provides a path towards actualising one's potential and accessing individual upward mobility opportunities. While the transition to university marks an important phase in students' lives, it is not without challenges. During this phase, students contend with separating from their family members and living independently, engage in self-discovery, forge new friendships, manage finances, traverse new environments and habituate to new academic demands. Generally, the transition to university is notably challenging. However, it is even more burdensome for first-generation students (FGS), namely, students from families with no history of higher education or parents with no qualifications beyond high school.

FGS encounter a myriad of challenges from which non-first generation students (NFGS) are spared. The challenges encompass familial, social, financial, academic and psychological issues. Since FGS come from families with no history of education, a decision to attend university may be perceived by family members as unconventional and those close to the student may not be

receptive to it. Therefore, students may not enjoy the desired support from family members during their studies. In addition, parents' lack of university experience may impede them from talking to their children about the norms and expectations of higher education (Poosti, 2019). FGS may also struggle with friendships while at university due to a lack of social capital required to make friends (Glass, 2023). These students may also encounter new cultures in their institutional context and accordingly, experience a cultural mismatch (Adams & McBrayer, 2020). Hence, they may feel disconnected culturally and socially from university life (Soria & Stebleton, 2012). Furthermore, FGS tend to come from disadvantaged family backgrounds and are therefore likely to experience greater financial problems and lack the financial knowledge that NFGS have (Falcon, 2015; Rehr et al., 2022). Their lack of financial knowledge may be attributed to their family's financial capability issues and limited exposure to money. Furthermore, FGS are likely to be underprepared for university because they often have a poor schooling background as a result of attending low-performing and under-funded schools, which may not have prepared them sufficiently for higher education (Falcon, 2015). This, in turn, may contribute to their difficulty in adapting to university teaching and learning standards (Meyer & Schreiber, 2024). Due to a multitude of hurdles relating to navigating and adapting to university, FGS are susceptible to experiencing mental health illnesses such as anxiety, general stress, acculturative stress, homesickness distress, depression and suicide ideation (Lipson et al., 2023; Smith & McLellan, 2023; Weichen et al., 2022).

Related research has suggested that FGS are more prone to experiencing academic motivation issues than NFGS (Li et al., 2023). Similarly, Soria and Stebleton (2012) revealed that FGS have lower academic engagement in comparison to NFGS, suggesting that FGS may be at risk of developing academic motivation problems. Heath (2020) debated that university transitional factors play a role in influencing FGS' academic motivation negatively. While FGS are vulnerable to feeling less motivated towards their studies, having a network of supportive friendships can fortify their motivation. Alotaibi et al. (2023) revealed that friendships foster a supportive environment for collaborative learning, enhancing motivation and contributing to a positive academic experience. Similarly, Hunter (2023) found a positive association between friendship support and study-related motivation among university students. While some studies have confirmed the potential influence of friendship support on academic motivation, other studies have shown that suffering higher academic anxiety and lacking a sense of belonging in the learning environment can also contribute to academic motivation problems (Fernández et al., 2023; Majali, 2020). However, there is a paucity of literature on the influence of friendship support, academic anxiety and sense of belonging on academic motivation among FGS. Accordingly, the aim of this study was to address this gap.

Conceptually, friendship support refers to care, encouragement, feelings of compassion and companionship towards one's peers. In the university context, this may be characterised by mutual trust, collective effort and feelings of academic camaraderie. Academic anxiety may be defined as feeling worried, emanating from real or perceived pressures, anticipated challenges and uncertainties in the learning environment (Mtshweni, 2024). While sense of belonging comprises feelings of connectedness, mattering to others, cared about, accepted, respected and valued by the campus community (Strayhorn, 2019), academic motivation refers to the process in which [academic] goal-directed activities are initiated and sustained (Cook & Artino Jr, 2016). It is a drive that propels students to remain task-focused to achieve academic goals.

Friendship Support and Academic Motivation

Friendships are a fundamental part of students' university life and can serve as vital sources of support. Picton et al. (2017) revealed that friendship relations among undergraduate students motivate them to expend effort into their studies and remain engaged. This corroborates with Shanti et al. (2021) who found a positive association between friendship support and academic motivation. Further, Tang and He (2023) demonstrated that varying forms of support, including

friendship support, were not only associated with academic motivation but also had a predictive effect. In addition, Marley and Wilcox (2022) showed that friendship support significantly predicted academic motivation among undergraduate students. Permatasari et al. (2021) argued that the fulfilment of support by friends is crucial for students' motivation and resilience and plays an important role in aiding them to navigate academic obstacles. Accordingly, Mai et al. (2021) concluded that friendship support can increase students' positive coping strategies to deal with academic difficulties. While evidence has shown a link between friendship support and academic motivation, it remains unclear how friendship support influences academic motivation among FGS. Hence, it was hypothesised that friendship support has a significant influence on academic motivation.

Mediating Role of Sense of Belonging

Friendship support has psychological benefits for university students. Gao and Liu (2021) revealed that friendships can foster a sense of belonging in the learning environment, particularly when students share similar attributes and interests. In addition, Picton et al. (2017) showed that establishing friendships with people who have common interests improves wellbeing by reducing stress and increasing a sense of belonging. In addition, Yust (2021) posited that having quality friendships contributes to greater feelings of a sense of belonging towards the institutions. In addition, Pittman and Richmond (2008) demonstrated an association between friendship quality and a sense of belonging to a university. These findings are untoward as friendships can offer an opportunity for students to find commonalities, increase relatability, strive for identical goals and support each other. While friendship support is reportedly crucial for inculcating belongingness among students, a sense of belonging, in turn, has been found to have a close association with academic motivation. Pedler et al. (2022) found a statistically significant positive relationship between a sense of belonging and academic motivation, suggesting that students with a greater sense of belonging are more likely to have greater levels of academic motivation. Similarly, Freeman et al. (2007) showed that a sense of belonging is positively associated with academic motivation. This indicates that students who identified with the university and felt they were an integral part of the institution felt more confident about accomplishing their academic goals (Freeman et al., 2007). Kelly et al. (2024) revealed that a sense of belonging was connected to the enjoyment of learning and academic motivation, suggesting that belongingness could be a protective factor against academic disengagement and demotivation among university students. This concurred with Suhlmann et al. (2018) who found that a sense of belonging significantly predicted academic motivation.

Although the association between friendship support and a sense of belonging as well as the association between a sense of belonging and academic motivation have been investigated, the mediational role of a sense of belonging in the relationship between friendship support and academic motivation is yet to be explored. Hence, it was hypothesised that a sense of belonging significantly mediates the relationship between friendship support and academic motivation.

The Moderating Role of Academic Anxiety

Friendship support plays an important role during university. Pittman and Richmond (2008) found that friendship support among undergraduate students was linked to university belonging. Anistranski and Brown (2023) argued that having friendship networks and close friendships can bolster belongingness, paving the way for a positive learning experience. Both friendship support and academic anxiety have been linked to a sense of belonging. Kelly et al. (2024) posited that anxiety could affect students' sense of belonging at university, leading to a range of negative academic outcomes and psychological problems (Bülbül & Odacı, 2023). In addition, Mtshweni (2024) demonstrated that academic anxiety was negatively associated with a sense of belonging,

suggesting that an increase in study-related anxiety could result in decreased feelings of belonging towards the institution. In turn, a sense of belonging can influence academic motivation (Li et al., 2013). Based on the literature, it may be deduced that the interaction between a stronger friendship support and reduced academic anxiety could reinforce a sense of belonging to a university, for a stronger academic motivation. Hence, it was hypothesised that academic anxiety significantly moderates the relationship between friendship support and sense of belonging in the mediated pathway of friendship support, sense of belonging and academic motivation.

The Present Study

Limited research has been conducted on the influence of friendship support, academic anxiety and sense of belonging on academic motivation. However, evidence has suggested that friendship support is associated with academic motivation, a relationship that could be mediated by a sense of belonging. Further evidence has indicated that friendship support is associated with a sense of belonging, a relationship that could be moderated by academic anxiety. Hence, the study proposed a moderated mediation model (Figure 1) with the following hypotheses:

H1: Friendship support significantly influences academic motivation.

H2: Sense of belonging significantly mediates the relationship between friendship support and academic motivation.

H3: Academic anxiety significantly moderates the relationship between friendship support and sense of belonging in the mediated pathway of friendship support, sense of belonging and academic motivation.

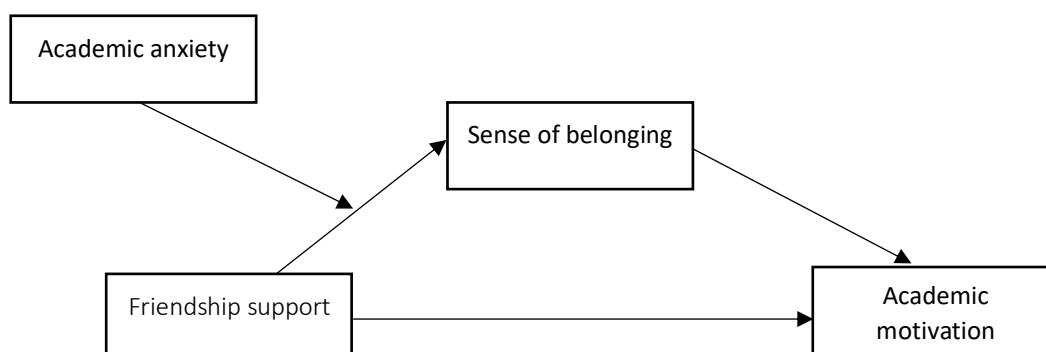


Figure 1. Hypothesised model

METHODS

Participants and Procedure

Ethical clearance was obtained from the University of South Africa's College of Human Science's Ethical Review Committee. The data used in the study were collected from undergraduate FGS at a South African university. A convenient sampling technique was employed to recruit eligible participants. The online survey maker tool, *Qualitrics*, was utilised to administer the questionnaire. Before completing the questionnaire, participants read the information letter in which the purpose of the study was explained. The participants also read the consent form and agreed to participate in the study. In addition, the participants were assured of voluntary participation, confidentiality and anonymity. A total of 240 participants responded to the survey. Of this sample, $n = 174$ (72.5%) were female and $n = 66$ (27.5%) were male. In addition, $n = 207$ (86.3%) were black, $n = 11$ (4.6%) were coloured (i.e., mixed-race), $n = 4$ (1.7%) were Indian, 17 (7.1%) were white and $n = 1$ (0.4%) identified themselves as "other." The participants were between the ages of 19 and 40 years ($M = 28.52$; $SD = 5.20$).

Instruments

The **Multidimensional Scale of Perceived Social Support (MSPSS)**, which was developed by Zimet et al. (1998), was used to assess friendship support. A total of 4 items from the MSPSS were employed to measure friendship support. The items included “I can count on my friends when things go wrong” and “I can talk about my problems with my friends” and were rated on a 5-point Likert scale, ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). The internal consistency reliability of the MSPSS measure was found to be 0.91.

Gooednow’s (1993) **Psychological Sense of School Membership (PSSM)** was used to assess students’ sense of belonging towards their institution. Eight items from the PSSM were utilised to measure sense of belonging. Sample items included “I feel proud to belong to university” and “I wish I were in a different university.” The items were rated on a 5-point Likert scale, ranging from 1 (*not at all true*) to 5 (*completely true*). The internal consistency reliability of the PSSM was found to be 0.80.

The **Anxiety Scale for Undergraduate Students (ASUS)**, which was developed by Singhal (2015), was employed to evaluate academic anxiety. Five items from the ASUS were utilised to measure academic anxiety. Examples of such items included “I feel nervous I might not be able to complete my work on time” and “I worry that I am not able to make proper time for studying.” These were rated on a 5-point Likert scale, ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). The internal consistency reliability of the ASUS was found to be 0.69.

Vallerand et al.’s (1992) **Academic Motivation Scale (AMS)** was employed to assess academic motivation. The seven items of the AMS include “I attend university because I want to prove to myself that I can succeed in my studies” and “I attend university because when I succeed in my studies, I feel important.” The AMS was rated on a 5-point Likert scale, ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). The internal consistency reliability of the AMS was found to be 0.81.

Data Analysis

The IBM SPSS version 29.0 was utilised to analyse the data, which included descriptive and bivariate correlations. In addition, linear regression analysis was conducted to examine the influence of friendship support on academic motivation. Furthermore, while PROCESS macro for SPSS model 4 was employed to assess the mediating role of sense of belonging in the relationship between friendship support and academic motivation, model 7 was used to assess whether academic anxiety significantly moderates the relationship between friendship support and sense of belonging (Hayes, 2013). To assess the statistical significance of the indirect effects at different levels of the mediator and moderator, the confidence intervals were set at 95% with 5000 bootstrap samples. The statistical significance of a test was considered if the confidence intervals excluded a zero.

RESULTS AND DISCUSSION

Descriptive Statistics and Bivariate Correlations

The descriptive statistics and bivariate correlations of the variables are displayed in Table 1. First, the results revealed that friendship support negatively and significantly correlated with academic anxiety ($r = -0.13, p < 0.05$), positively and insignificantly correlated with a sense of belonging ($r = 0.01, p > 0.05$) and positively and significantly correlated with academic motivation ($r = 0.21, p < 0.01$). Second, the results showed that academic anxiety negatively and significantly correlated with a sense of belonging ($r = -0.44, p < 0.01$) and negatively and insignificantly correlated with academic motivation ($r = -0.10, p > 0.05$). Last, the results demonstrated that a sense of belonging positively and significantly correlated with academic motivation ($r = 0.22, p < 0.01$).

Table 1. Descriptive statistics and bivariate correlations

Variable	<i>M</i>	<i>SD</i>	1	2	3	4
Friendship support	3.35/5	1.09	-			
Academic anxiety	2.86/5	0.84	-0.13*	-		
Sense of belonging	3.53/5	0.82	0.01	-0.44**	-	
Academic motivation	4.27/5	0.60	0.21**	-0.10	0.22**	-

Note: ** $p < 0.01$; * $p < 0.05$

Influence of Friendship Support on Academic Motivation

The study assessed whether friendship support could have a statistically significant influence on academic motivation (H1). The linear regression analysis revealed that friendship support significantly influenced academic motivation ($B = 0.12$, $t = 3.46$, $p < 0.05$). Hypothesis 1 was, therefore, supported.

Testing the Mediation Effect of Sense of Belonging

The study assessed whether a sense of belonging could significantly mediate the relationship between friendship support and academic motivation. Using PROCESS macro model 4, friendship support was considered to be a predictor variable (X), sense of belonging to be the mediating variable (M) and academic motivation to be the outcome variable (Y). The results demonstrated that friendship support had a statistically insignificant effect on academic motivation through a sense of belonging ($B = 0.01$; 95% BCa CI [-0.01, 0.02]) (see Table 2). Hypothesis 2 was, therefore, not supported.

Table 2. Mediating effects of sense of belonging in the relationship between friendship support and academic motivation

Model	β	SE	<i>t</i>	<i>p</i>	95% CI
FS → SOB	0.01	0.04	0.17	0.8605	[-0.08, 0.10]
SOB → AM	0.16	0.04	3.62	0.0001	[0.07, 0.25]
FS → AM	0.12	0.03	3.51	0.0005	[0.05, 0.18]
FS → SOB → AM	0.01	0.01	–	–	[-0.01, 0.02]

FS= Friendship Support; SOB=Sense of Belonging; AM= Academic Motivation; SE= Standard Error; 95%CI= Confidence Interval

Testing for Moderating Effects of Academic Anxiety

PROCESS macro model 7 was employed to test the moderating effect of academic anxiety in the relationship between friendship support and sense of belonging. The results revealed that the mediating effect of a sense of belonging at a low level (-0.0080) included a 0 between the confidence intervals, thus implying that there was no mediating effect. In addition, the mediating effect of sense of belonging at the mean (-0.0064) included a 0 between the confidence intervals, suggesting no evidence of mediation. Further, the mediating effect of a sense of belonging at a high level (-0.0047) did not exclude a 0 between confidence intervals, thus revealing no evidence of mediation (see Table 4 and Figure 2). Moreover, the interaction between friendship support and academic anxiety showed an insignificant effect ($\beta = 0.0119$, $t = 0.2379$, $p > 0.05$) (see Table 3). Moreover, the index of moderated mediation was found to be statistically insignificant (Index = 0.01, 95% CI = [-0.01, 0.01]). Accordingly, when the effect of friendship support on a sense of belonging increased, the moderating effect of academic anxiety at different levels did not differ significantly. Therefore, academic anxiety did not significantly moderate the relationship between friendship support and

a sense of belonging in the mediated pathway of friendship support, sense of belonging and academic motivation. Hypothesis 3 was, therefore, not supported.

Table 3. Test of moderating mediating effects

Model relationships	<i>B</i>	<i>SE</i>	<i>t</i>	<i>p</i>	95% CI
Friendship support → Sense of belonging	-0.03	0.04	-0.86	0.3888	[-0.12, 0.04]
Academic anxiety → Sense of belonging	-0.43	0.05	-7.58	0.0001	[-0.55, -0.32]
Friendship support X Academic anxiety	0.01	0.05	0.23	0.8122	[-0.08, 0.11]
Friendship support → Academic motivation	0.12	0.03	3.51	0.0005	[0.05, 0.18]
Sense of belonging → Academic motivation	0.16	0.04	3.62	0.0004	[0.07, 0.25]
Index of moderated mediation	0.01	0.01	-	-	[-0.01, 0.01]

SE= Standard Error; 95%CI= Confidence Interval

Table 4. Conditional indirect effect results

Moderating variable	Level	Level value	Effect	BootSE	BootLLCI	BootULCI
Academic anxiety	Low level (-1SD)	2.0213	-0.0080	0.0110	-0.03	0.01
	Mean	2.8646	-0.0064	0.0088	-0.02	0.01
	High level (-1SD)	3.7079	-0.0047	0.0127	-0.03	0.01

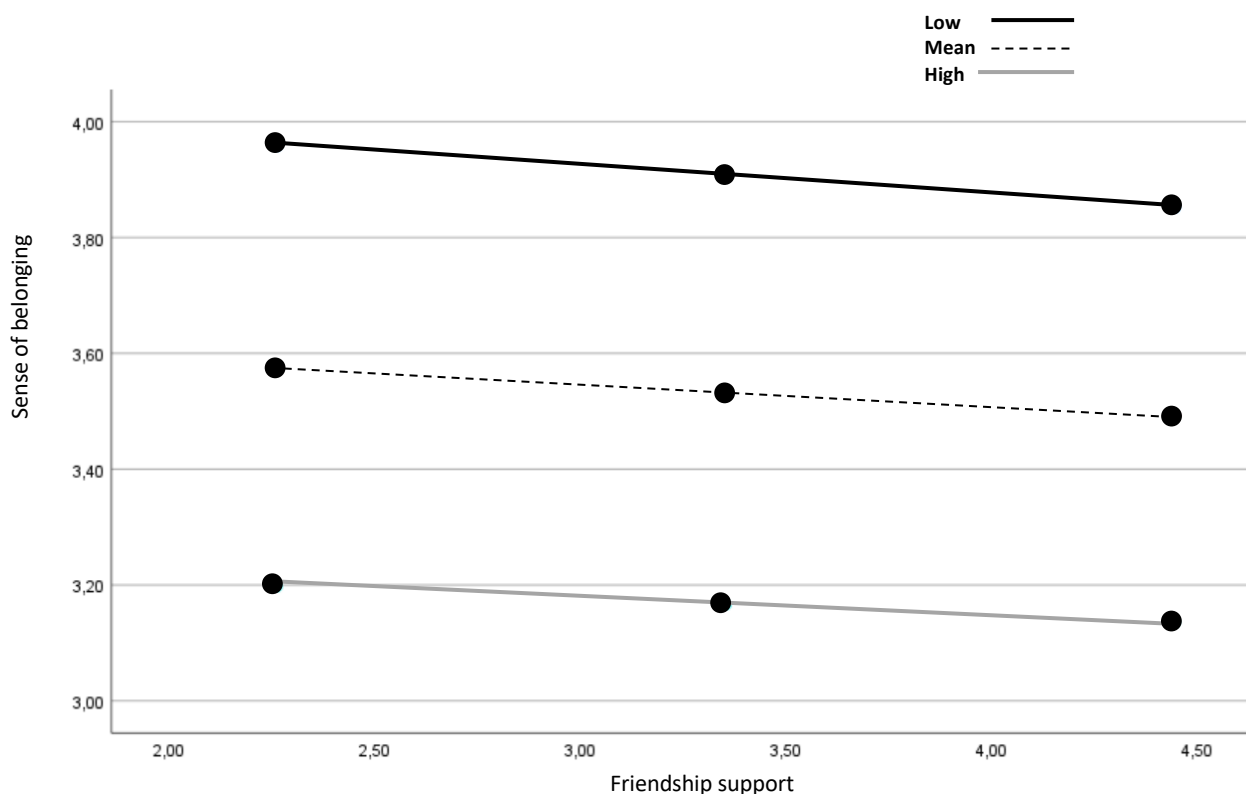


Figure 2. Effect of moderation-mediation model

Discussion

This study investigated the influence of friendship support, academic anxiety and sense of belonging on academic motivation. Sense of belonging and academic anxiety were examined as a mediator and moderator, respectively. The results revealed that friendship support significantly influenced academic motivation, which is consistent with previous studies (Dechant, 2011; Marley & Wilcox, 2022). This finding is supported by the literature, which has highlighted that friendships serve as important support systems that encourage motivation among students and help them cope with academic demands (Alotaibi et al., 2023; Shanti et al., 2021). The findings concur with Fabiano (2022) who identified friendship support as one of the vital support systems to help FGS thrive at

university. Fabiano (2022) further revealed that friendship support can aid FGS in making decisions, offer space to talk and enable them to balance university demands and handle stress. This suggests that FGS should have supportive friendships to help them navigate university and stimulate motivation.

Sense of belonging did not significantly mediate the relationship between friendship support and academic motivation. The mediated pathway showed that while a sense of belonging had a statistically significant influence on academic motivation, friendship support did not significantly influence a sense of belonging. Research has demonstrated that the absence of friendships has a negative effect on students' sense of belonging and exacerbates feelings of loneliness (Picton et al., 2017; Zheng et al., 2023). FGS tend to have challenges establishing friendships in the institutional context (Glass, 2023). The results of this study revealed that although friendship support did not bolster a sense of belonging, it had a significant direct effect on academic motivation. This implies that students who scored higher on friendship support also scored higher on academic motivation and sense of belonging played no role in this relationship. Hence, scholars have stressed the importance of FGS establishing supportive friendships to enhance their academic commitments (Lund et al., 2022; Picton et al., 2017).

Academic anxiety did not significantly moderate the relationship between friendship support and a sense of belonging. Consequently, the interaction between friendship support and academic anxiety did not influence the sense of belonging. These findings are in contrast with previous research that has indicated that friendship support and academic anxiety contribute to a sense of belonging (Gao & Liu, 2021; Kelly et al., 2024). Students' sense of belonging to university is influenced by a variety of environmental and social factors (Sithaldeen et al., 2022), including individual characteristics such as gender and identity factors, connections students have outside of the learning context, living arrangements, relations with the faculty and the curriculum (Crawford et al., 2023; Maranges et al., 2023; Tavares et al., 2021). This suggests that other factors, other than friendship support and academic anxiety, were responsible for the sense of belonging the students in this study experienced. This supports Strayhorn's (2016) theory of belonging, which posits that students' sense of belonging can be satisfied in numerous ways and that individual identities and social factors intersect in complex ways that affect their belongingness. Nonetheless, the results of the study revealed that sense of belonging had a predictive effect on academic motivation, suggesting that FGS need to develop feelings of belonging and identify with the wider institutional context and customs to acquire stronger academic motivation. This concurs with previous research that has shown that students of marginalised identities, including FGS, need to develop a sense of belonging to realise their higher education goals (Mtshweni, 2024; Stebleton & Soria, 2013; Strayhorn, 2012). Accordingly, belongingness is an essential factor that plays a significant role in ensuring that FGS succeed academically.

Implications

FGS face additional barriers to academic success while at university (Stebleton & Soria, 2013). This study revealed that friendship support and a sense of belonging contributed to academic motivation, suggesting that when students are supported by friends and are integrated meaningfully into the institutional context, they are able to be academically task-driven. Therefore, efforts to support FGS are necessary.

First, universities need to establish formal FGS programmes with the primary goal of providing extended support. These programmes can focus on intervention strategies such as providing scheduled university student orientations, helping FGS establish and manage friendships, and offering short learning programmes on interpersonal and networking skills. Such programmes could bolster belongingness towards the university in order to realise stronger academic motivation.

Second, universities should implement extracurricular activities that will enable FGS to network seamlessly, acquaint with fellow students and find belongingness. Moreover, universities should integrate extracurricular activities with the curriculum to afford FGS the opportunity to identify with the university and develop their motivation towards their academic work. Some of the extracurricular activities that could be integrated into the university curriculum include entrepreneurship, arts and creativity, leadership, debates, curriculum gamification, and science and technology competitions. O'Donnell et al. (2023) stated that students who engage in extracurricular activities tend to report a higher sense of belonging towards the institutional context, which has been found to be linked to academic motivation (Pedler et al., 2022).

Third, it is imperative that universities implement academic performance and progression tracking tools for FGS. These tools could be used to monitor students' academic performance and progression. Furthermore, these tools should be embedded with mechanisms to flag a drop in academic performance for intervention purposes. Paideya and Dhunpath (2018) argued that academic monitoring and support systems, which have a similar function to academic performance and progression tracking tools, can provide effective and sustainable support for students who are at risk through the early-warning system. These warning systems can prompt coordinated and individualised support such as dedicated counselling services and study-related support. In turn, such efforts could make students feel that they matter to the institution and, therefore, enhance their sense of belonging and motivation.

Finally, universities could implement academic peer mentorship programmes for FGS. Senior or graduate FGS could serve as appropriate mentors since they have acquired practical experience in dealing with academic challenges. Lapon and Buddington (2024) demonstrated that peer mentoring was important for enabling students to achieve social integration and enhancing FGS' sense of belonging.

Limitations and Further Research

This study demonstrated the influence of friendship support, academic anxiety and sense of belonging on academic motivation. However, like other studies, the study has limitations worth noting. First, as the study was conducted at a single institution, the results may not be generalisable to other institutions. It is recommended that future research replicates the study across institutions to increase the generalisability of the results. Second, the study used self-report measures, which are prone to self-report bias. It is recommended that future research triangulates data collection methods. Finally, a cross-sectional design was employed in which data collection occurred on a single occasion. It is recommended that a longitudinal design be utilised to assess how the variables investigated change over time.

CONCLUSION

While academic anxiety and sense of belonging did not act as significant moderators and mediators, respectively, this study showed that friendship support and sense of belonging play a crucial role in influencing academic motivation among FGS. The findings highlight the intricate association between friendship support and sense of belonging in bolstering academic motivation. One may deduce from the findings that it is vital that FGS establish supportive friendships and find belongingness towards the institutional contexts to curb study-related anxiety and enhance motivation and resilience for academic success.

ACKNOWLEDGMENTS

The Author is grateful for the funding support from the National Institute for the Humanities and Social Sciences.

AUTHOR CONTRIBUTIONS STATEMENT

The Author has read and approved the final version of the manuscript.

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